The premiums could be configured in a number of ways, depending on the extent to which costs are to be risk-related and on the desired amount of revenue from the premium. As an alternative, however, sponsors could be required to obtain insurance in private markets.

Options for Reducing Underfunding or the Termination of Underfunded Plans

By its very nature, insurance of private pension benefits increases the likelihood that pensions will be underfunded and that underfunded plans will be terminated. To limit these effects, changes could be made in the methods currently used to fund pensions and in the treatment of certain benefits.

Increase Minimum Annual Pension Contributions by Sponsors. Increasing annual pension contributions by sponsors would be one way to increase directly the level of pension funding throughout the lives of the plans. One approach would be to tie pension contributions directly to the level of the plan's funding, calculated as if the plan were to terminate today, thereby requiring larger contributions by sponsors of underfunded plans. Alternatively, or in addition, amortization periods for supplemental pension costs could be shortened.

More rapid funding of pension obligations could increase the likelihood that the assets of pension plans would be available to pay promised benefits, while the added pension contributions generally would not come at a time when the sponsors were in severe financial difficulty. Requiring higher pension contributions, however, might lead to slower wage growth for the sponsors' employees and could discourage the use of defined-benefit plans.

Further Restrict Waivers of Minimum Funding Obligations. Under current law, sponsors in financial difficulty can request from the Internal Revenue Service (IRS) a waiver of their annual pension contribution. Recent changes in this law generally allow the IRS to require security on any waived amounts. Further statutory restrictions on the conditions of the waivers could increase the funding levels in some pension plans, but also might worsen the financial position of the sponsor and increase the likelihood of the future termination of the plan.

Reduce Insurance Protection for Certain Benefits Derived from Layoffs or Plant Closings. Reducing insurance protection for extra pension benefits derived solely from layoffs or plant closings could limit the extent to which these benefits result in claims against the PBGC. Although sizable portions





of these benefits are not insured, they can lead to higher claims either because a portion of them is insured or because they are paid to participants--in lump sums, for example--before the plan is terminated, thereby reducing the funds that remain to pay guaranteed benefits later. The PBGC estimates that, in the steel industry, roughly \$1 billion in unfunded claims has resulted from these benefits, although there is little data on the inclusion of these benefits in pension agreements.

This restriction could lead to less reliance on this type of pension benefit, thereby reducing claims against the PBGC. On the other hand, these benefits may be necessary to protect the income security of some workers who lose their jobs. Moreover, the benefits may make affected workers more willing to accept overall economic change--thereby potentially improving the adaptability of the economy, which would ultimately benefit everyone.

Options for Directly Raising Revenues or Reducing Outlays

If direct changes in the financial status of the PBGC are desired, several options are available, including raising the insurance premium, increasing receipts from other sources, and reducing outlays for benefits.

Increase the Insurance Premium. Program revenue could be increased directly by raising the insurance premium charged on behalf of participants. Each \$1 increase in the PBGC premium in 1988, for example, would generate about \$30 million in revenue. Raising the premium could be accomplished with a one-time increase or by indexing the premium to changes in an indicator, such as average wages in the economy or the level of claims against the PBGC. This increase could be made either with the current rate structure or in conjunction with a change to a variable-rate structure.

Raising revenues by increasing the premium would help to restore solvency to the program by using the mechanism originally designed to provide program funds. On the other hand, large increases in pension premiums could discourage the future use of defined-benefit pensions, with a possible reduction in the income security of affected workers.

Increase Other Receipts. Revenue could also be increased in other ways, including imposing a one-time charge on pension participants, raising the priority of the PBGC's claim in bankruptcy proceedings on the assets of sponsors of terminated underfunded plans, or using federal general revenues to pay part of the debts of the PBGC. Using alternative sources of funds

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could satisfy the need for increased revenue without discouraging the continued use of defined-benefit pensions. On the other hand, these options would also divert funds from other, potentially more productive uses to benefit certain workers, many of whom have above-average incomes.

Reduce Outlays for Benefits. Reducing benefits for new claimants would also directly improve the PBGC's financial situation. Expenditures could be reduced by lowering benefit protection across the board, by lowering the maximum benefit guaranteed by the program, or by reducing insurance coverage for particular types of benefits. Reducing benefit protection for new claims to 85 percent of the present guarantee could lower insured claims against the PBGC by an average annual amount of between \$50 million and \$100 million, for example, using past claims as an indicator of future claims. Reducing the maximum guaranteed benefit from the current \$1,858 per month could have a much smaller impact, because it appears that relatively few claimants reach that cap. Finally, the effect of reducing insurance coverage for certain pension benefits would depend on the prevalence of those benefits in plans that terminated with claims against the PBGC.

One argument for these limitations is that workers who will benefit from the program's protection should share directly in the costs of restoring its financial stability. On the other hand, reductions in benefits are contrary to the government's promise to protect earned pension benefits, and future claimants would be treated differently from those whose underfunded plans have already terminated.

INTRODUCTION

In recent decades, employer-sponsored pensions have become an increasingly common component of compensation for workers. Together with private health insurance, life insurance, and employee leave, pension plans and these other fringe benefits have nearly doubled since 1950 as a share of total payroll in the private sector. The share of wage and salary workers covered by private pensions has grown from 22 percent in 1950 to nearly 50 percent in 1984. Employers' contributions to private pension plans have increased in constant 1984 dollars from \$9 billion in 1950 to \$69 billion in 1984. As a result, pensions are now an important and growing source of income for retired workers and their families.

Unlike most other fringe benefits, pension benefits generally are not received by workers until many years after they are earned. Furthermore, in plans known as defined-benefit pension plans--which promise a given level of benefits in retirement based on a worker's tenure and earnings with the firm, and which cover the majority of workers with pensions today-employers can spread out over several years into the future the contributions necessary to pay for certain types of promised benefits. Consequently, for a significant share of pension participants, the receipt of pension benefits in retirement depends in part on the future economic status of their employers.

Concern about the receipt of promised pension benefits led to the creation in 1974 of a federal pension insurance program as part of the Employee Retirement Income Security Act (ERISA). ERISA specified minimum standards that pension plans must meet regarding participation, accrual of benefits, vesting, and funding. Along with it, the Congress created the Pension Benefit Guaranty Corporation (PBGC) to insure pension beneficiaries against the loss of promised benefits if their plan is terminated without adequate funding. Today, the PBGC insures the pension benefits of over



30 million workers, and it has assumed responsibility for paying the pension benefits of about 355,000 workers whose plans terminated without sufficient funds to pay all insured benefits. $\underline{1}$ /

The financial status of the federal pension insurance program has deteriorated throughout most of its life, however, and the PBGC has now accumulated a large and growing deficit. This shortfall of funds to pay future benefits has been increased markedly by the recent terminations of a few large pension plans that have transferred substantial unfunded liabilities to the PBGC. 2/ Assets held by the PBGC now represent less than one-half of the present value of its liabilities to participants in terminated underfunded plans. Some legislative changes recently have been made in the program, but these changes may not be enough to alter its long-term financial trend.

The difficulties of the PBGC have raised questions about its future financial status and about how the program influences the funding of private pensions. Concerns also have been raised about the potential effects of the PBGC's problems on the incomes of retirees with federally insured pensions and on the federal budget. This study examines one type of pension planthe defined-benefit plan sponsored by single employers--because the funding and insurance of such plans are the focus of policy concern today.

These figures are for the insurance program for private pensions sponsored by single employers. See Chapter II for a discussion of single-employer and multiemployer pension plans.

Part of these transfers are now being contested in Bankruptcy Court and U.S. District Court. If successful, this action could reduce the PBGC's accumulated deficit by about one-half. See Chapter IV.

THE STRUCTURE OF PRIVATE PENSIONS

Pension plans use a vast array of benefit and financing alternatives, although many are built around a few basic structures. Variations among plans often reflect the differing needs of employers and workers in different industries and situations. This chapter provides a brief summary of the structure of private pensions today.

THE BASICS OF PRIVATE PENSIONS

Private pensions enable employers to contribute directly to the retirement income of their workers. 1/ Employers need not provide these pensions, but if they do the federal government requires that the plans satisfy several conditions relating to participation, accrual of benefits, vesting, and funding. To qualify for favorable treatment under federal tax laws, which most plans do, so-called qualified plans also must provide benefits to a representative cross-section of workers. 2/

Pensions as a Form of Compensation for Workers

Under normal income tax rules, if a worker deposits earnings in a savings account, both those earnings and the investment income they generate are included in taxable income. The tax treatment of contributions to qualified private pensions is different, however, and allows retirement income to accumulate at a rate that is often considerably greater than that which

^{1.} In this analysis, the terms "plan's sponsor" and "employer" are used interchangeably. Both refer to the entity that provides the pension to its workers.

^{2.} This chapter relies heavily on information presented in Dan M. McGill, Fundamentals of Private Pensions, 5th ed. (Homewood, Ill.: Richard D. Irwin, Inc., 1984). For more information on tax treatment and other aspects of various sources of savings for retirement, see Congressional Budget Office, Tax Policy for Pensions and Other Retirement Saving (April 1987).

workers could achieve otherwise, for two reasons. First, contributions by employers to qualified plans are not included in the taxable income of workers until benefits are received, which usually occurs many years later. Second, investment income from these assets also is not taxed until it is distributed. 3/

Given the financial advantages of this form of compensation, many pension plans include features that are particularly desirable to certain types of workers and employers. For example, plans may be structured to reward workers who stay with the same employer for several years, by providing benefits that increase with gains in both job tenure and annual earnings. Many of these plans also target benefit payments toward longer-term employees by withholding vesting of the employer's contributions until several years of service have been completed. 4/ Such provisions reward workers who have stable employment histories and aid employers who have invested heavily in developing the skills of their work force. Other plans conform to alternative work environments where jobs with particular employers are short-lived but employment within the industry is more stable. In the construction and trucking industries, for example, pensions cover workers employed by any of several firms in the same industry and geographic region.

Types of Private Pensions

Pension plans are distinguished along two dimensions. The first divides plans into those that provide a prescribed level of benefits in retirement, called defined-benefit plans, and those to whom the employer simply contributes a given amount of money each year, regardless of the level of benefits that ultimately result, called defined-contribution plans. The other distinction is between plans sponsored by one employer (known as single-employer plans) and those plans that are collectively bargained and offered jointly by several employers, called multiemployer plans.

^{3.} Employers are allowed to treat contributions to qualified pension plans as a business expense at the time they are made. Contributions to some nonqualified deferred compensation plans, on the other hand, cannot be deducted until the workers receive the deferred compensation. See Congressional Budget Office, Tax Policy for Pensions, Appendix B.

^{4.} Pension benefits are said to be vested if the worker has a right to those benefits even if he or she ceases to be employed by the plan's sponsor before retiring.

Defined-Benefit and Defined-Contribution Plans. A major determinant of whether the employer or the worker accepts the risks of pension funding is whether the employer guarantees a given pension benefit in retirement or simply contributes a fixed annual amount toward retirement. In a defined-benefit plan, the employer agrees to contribute whatever funds are necessary to provide a specified pension benefit to workers during each year of retirement. 5/ Employers' contributions can vary according to economic and demographic conditions affecting the plan. For instance, if the investment performance of the assets already contributed by the employer is below expectation, or if other aspects of the plan's experience result in unexpectedly high costs, then the employer is responsible for the funding shortfall. If experience is better than expected, then the employer can reduce future contributions.

Defined-contribution pension plans, however, do not prescribe a benefit level in retirement. Instead, benefits depend only on contributions and their rate of return. The employer's obligation is limited to providing the agreed-upon pension contribution, regardless of future economic conditions and of the resulting level of retirement benefits for the worker.

Although there are fewer defined-benefit plans than defined-contribution plans, the former include many more participants and contain the greatest share of pension assets. In 1981, nearly 70 percent of pension plans were defined-contribution plans, but 64 percent of participants were in defined-benefit plans. Almost 71 percent of pension assets were in defined-benefit plans in that year. 6/

From the standpoint of the federal pension insurance program, only defined-benefit plans are relevant since the obligations of employers for other plans are fulfilled when they make contributions. With defined-benefit plans, the obligations of employers are not completed until benefits are paid or until annuity contracts are purchased for participants.

Single-Employer and Multiemployer Plans. Pension plans are also divided between those operated for the employees of one firm, and those that are



^{5.} Reductions in the purchasing power of this benefit caused by inflation usually are not fully compensated for by employers, however.

^{6.} For these and other statistics on pension plans, see Richard A. Ippolito and Walter W. Kolodrubetz, eds., *The Handbook of Pension Statistics 1985* (Chicago, Ill.: Commerce Clearing House, Inc., January 1986), pp. 440-441.

collectively bargained and maintained for employees in more than one firm. 7/ From the viewpoint of pension insurance, the main distinction between these types of plans is in the liability of a given employer for retirement benefits of workers. With single-employer defined-benefit plans, that liability rests with the one employer; under multiemployer plans, the liability is allocated among the worker's former employers, often in a complicated manner. 8/

The federal government insures both single-employer and multiemployer pensions, but the issues relating to these insurance programs are quite different. While single firms may fall on hard times and go out of business, for example, this is less likely to happen to groups of firms. Thus, while termination of a pension plan is a large issue for the insurance of single-employer pensions, issues concerning insurance of multiemployer plans are more concerned with the allocation of liabilities as firms enter and leave the participating group. The remainder of this analysis focuses on defined-benefit pension plans operated by single employers.

DETERMINANTS OF THE PENSION LIABILITIES OF EMPLOYERS

The financial liability of an employer to workers in its pension plan is determined primarily by the plan's eligibility conditions and benefit provisions. 9/

Eligibility Conditions

Eligibility rules for private pensions include requirements for participation and coverage, and the conditions under which earned benefits are vested.

^{7.} Multiemployer plans are collectively bargained pension agreements between a union and a group of employers; all other plans, including non-collectively bargained ones involving more than one employer, are categorized as single-employer plans.

^{8.} Single-employer plans dominate multiemployer ones in terms of the number of plans, the number of participants, and the level of plan assets. In 1981, single-employer plans accounted for more than 99 percent of all plans, nearly 85 percent of plan participants, and over 90 percent of pension assets.

^{9.} The descriptions in this section are intended to illustrate some of the dominant characteristics of private pensions today and may not be accurate characterizations of some plans. For more detailed descriptions of several specific plans, see Bankers Trust Company, Corporate Pension Plan Study: A Guide for the 1980's (New York: Bankers Trust Company, 1980). For information on the shares of employees covered by various features of pension plans, see Bureau of Labor Statistics, Employee Benefits in Medium and Large Firms, 1985, Bulletin 2262 (July 1986).

Participation and Coverage. Federal rules designed to ensure the widespread availability of pension benefits to workers in firms that maintain pensions require that qualified plans satisfy minimum standards for participation and coverage. Under provisions of the Employee Retirement Income Security Act (ERISA), pension plans cannot exclude from participation workers of the type covered by the plan who are at least 21 years old and have completed one year of at least half-time service, for example. Further, to achieve tax-qualified status, a plan also must meet one of several conditions on coverage: the plan must cover at least 70 percent of all non-highly compensated workers, for example, or it must cover a "fair" cross-section of workers, or meet other conditions. 10/

Vesting. Qualified pension plans also must meet minimum standards for vesting. These rules are designed to ensure that workers participating in a pension ultimately receive benefits whether or not they continue to work for the same employer until they retire. As a result of the Tax Reform Act of 1986, two options for vesting generally will be available to all plans beginning in 1989: either workers must have a nonforfeitable right to 100 percent of accrued benefits after five years of service, or their accrued benefits must vest in a graded fashion, rising from 20 percent after three years to 100 percent after seven years.

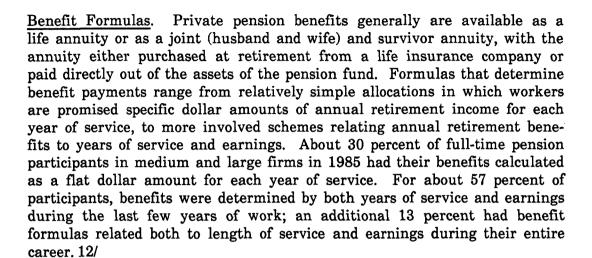
Under rules in effect until 1989, pension benefits need not vest as rapidly. The most common rule in use today--applicable to about 85 percent of full-time participants in defined-benefit plans in medium and large firms--is to vest 100 percent of accrued benefits after 10 years of service. Many other participants are subject to graded vesting, which occurs between 5 years and 15 years of service. 11/

Benefit Provisions

Benefit provisions include the formulas that relate benefits to past employment and wages, the relationship between the pension benefits and Social Security, the age and service requirements to receive normal or early retirement benefits, and, at least implicitly, the effects of inflation on the real value of pension benefits.

^{10.} See Congressional Budget Office, Tax Policy for Pensions, Appendix B. If the employer has more than one plan, then those plans together must satisfy one of these conditions.

^{11.} See Bureau of Labor Statistics, Employee Benefits, p. 69, which defines medium and large firms as those with at least 100 or 250 employees, depending on the industry they are in.



An example of the accrual of pension benefits illustrates the potentially strong interaction between job tenure and earnings in determining retirement benefits. The formula illustrated in Figure 1 calculates annual pension benefits in a typical fashion as one and one-half percent of the number of years of service multiplied by the worker's average salary during the last five years of employment. For this example, the hypothetical worker is assumed to begin employment earning \$15,000 per year, with those earnings growing at 6 percent annually. After 10 years of employment, the worker would be eligible for annual retirement benefits of about \$3,400; after 20 years, those benefits increase to over \$12,000 per year; after 30 years of employment, they reach nearly \$33,000. 13/

In this example, the increase in annual retirement income resulting from an additional year of service reflects not only that additional service but also the accompanying rise in wages. This more-than-proportional increase in pension benefits for each year of service can complicate the calculation of annual pension contributions by the sponsor and is one of the reasons why actuaries have developed intricate schemes for determining the amounts of funding needed to pay for future benefits.

Integration of Social Security and Pension Benefits. Although qualified pensions must not discriminate in favor of employees who are highly compensated, they are allowed to consider Social Security benefits when calcu-

^{12.} See Bureau of Labor Statistics, Employee Benefits, p. 56.

^{13.} For comparison, earnings in the thirtieth year of employment under this scenario would have been about \$81,000.

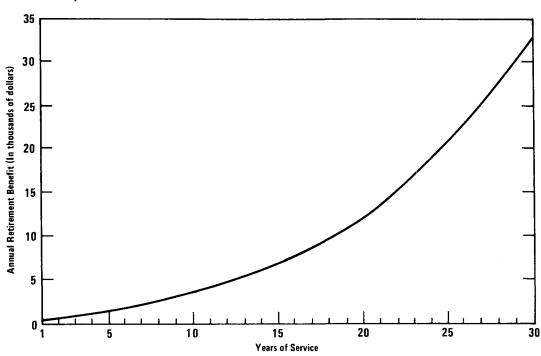


Figure 1.

An Example of the Accrual of Annual Pension Benefits

SOURCE: Congressional Budget Office calculations.

NOTE: Hypothetical annual pension benefit based on years of service and earnings.

lating pension benefits. Indeed, many pension plans that relate benefits to the worker's earnings also reduce those benefits by a portion of the worker's Social Security benefit. The particular method used to reduce pension benefits varies: some plans reduce them by a portion of the Social Security benefit, while others apply higher pension accrual rates to earnings above certain thresholds related to the Social Security tax base. In 1985, about 85 percent of pension participants in medium and large firms whose benefits depended on earnings were in plans that integrated those benefits with Social Security.

The Internal Revenue Service has long restricted the extent to which private pensions can be integrated with Social Security, however, and the Tax Reform Act of 1986 makes further limitations beginning in 1989. Although the new provisions are complicated, one typical limitation is that private pension benefits cannot be reduced because of Social Security to less than 50 percent of what they would have been without this integration. 14/



^{14.} See Congressional Budget Office, Tax Policy for Pensions, Appendix B.



One common explanation for the reallocation of private pension benefits to higher-wage workers is that both Social Security and private pensions are components of total retirement income, and that the availability of Social Security benefits reduces the amount of private pension benefits needed for retirees to reach a given standard of living. Furthermore, since the Social Security program replaces a higher share of prior wages for lower-wage workers, the fact that integrated private pensions favor higher-income workers can result in all workers receiving more similar total rates of wage replacement. 15/

Normal and Early Retirement. Like Social Security, private pensions generally set minimum ages for normal and early retirement for participants. The normal age of retirement in most plans is either 65 with no minimum service requirement, or 60 or 62 with at least 10 years of service. 16/ Early retirement benefits usually are first available at age 55 if the worker has been employed by the firm for at least 10 years. Unlike Social Security, however, where early retirement benefits are reduced actuarially to compensate for the longer expected duration of receipt, private pension benefits for some early retirees are reduced only slightly from the amount available at normal retirement.

<u>Effects of Inflation on Real Benefit Levels</u>. Because pension benefits are stated in nominal dollars, inflation occurring both before and after a worker retires can have an important impact on the real value of those benefits. In some cases, this impact is partially offset by amendments to the plan that raise benefits based on past service. In addition, some other sources of retirement income, such as Social Security, are adjusted for inflation.

Inflation that occurs before workers retire can reduce real pension benefits in two ways. First, if accrued pension benefits for a given year of employment are a flat dollar amount, or if they are determined by nominal earnings in that year, then--without amendments to the pension agreement--the real value of that benefit at retirement will be reduced by inflation that occurs in the intervening years. Second, even if benefits are tied to wages earned in the last few years of employment, thereby accounting for price changes as well as productivity increases and other gains that occur while the worker is employed by the plan's sponsor, real benefits can be eroded if the worker ceases employment with the sponsoring firm before beginning to receive retirement benefits.

^{15.} See Alicia H. Munnell, *The Economics of Private Pensions* (Washington, D.C.: Brookings Institution, 1982), p. 14.

^{16.} See Bureau of Labor Statistics, Employee Benefits, pp. 63-64.

Real pension benefits also can decline in the years after a worker starts to receive retirement benefits. This occurs in plans that do not provide cost-of-living adjustments to retirees. Only some plans provide such adjustments, and very few do so automatically. According to one survey, for example, nearly 60 percent of current pension participants were in plans that did not provide cost-of-living adjustments for retirees between 1980 and 1984 when prices rose by about 25 percent. Only about 4 percent of participants were in plans that automatically adjusted retirement benefits for inflation. 17/

FINANCING METHODS

Most private pension benefits are paid for directly by contributions from employers. The federal government generally prohibits qualified pensions from being funded on a pay-as-you-go basis, in which pension contributions would only meet current benefit payments to retirees. Instead, sponsors must make contributions that anticipate the accrual of benefits of workers in accord with an acceptable funding method, thus creating a fund for the payment of future retirement benefits. The accrual of pension benefits can be complicated, however, because of the potentially complex relationship between benefits and job tenure or earnings, and because some components of benefits, such as cost-of-living adjustments, may not be tied to particular years of covered employment. Thus, determining the appropriate annual pension contribution can be quite difficult.

This section explores three aspects of the financing of defined-benefit pensions:

- Evaluating pension costs for employers;
- o Legal requirements for pension contributions by employers; and
- o Factors influencing the financial status of pension plans.

Evaluating Pension Costs for Employers

The cost to an employer of a worker's pension depends primarily on the annual retirement benefit and on the number of years that benefits will be paid. The timing of future benefit payments also influences the employer's cost: the farther in the future that benefit payments occur, the more time



^{17.} See Bureau of Labor Statistics, Employee Benefits, pp. 54 and 67; and Bankers Trust Company, Corporate Pension Plan Study.



there is for current pension contributions to generate investment income, and the smaller is the necessary contribution. Sponsors therefore measure their current pension liabilities as the amount of money needed today, plus accumulated interest, to pay current and future benefits (known as the discounted present value).

At any point during a worker's career, there can be considerable uncertainty about the ultimate pension cost for the employer. This uncertainty is the result of imprecise knowledge about the worker's future employment, wages, and longevity; uncertain future rates of return on pension assets; and other factors.

Determining the appropriate pension cost for a given year of employment can be even more complicated. Uncertainties about future events are compounded in some plans because, as demonstrated above in Figure 1, pension benefits attributable to a given year of work sometimes depend on wages or employment in other years as well. Thus, calculating pension costs in the same manner as benefits accrue could result in widely different costs for different years of employment. In the example in Figure 1, accrued benefits grow more than proportionally with either job tenure or earnings separately, and the annual pension accruals in years immediately preceding retirement are especially large.

Thus, pension sponsors use so-called actuarial funding methods to allocate pension costs to particular years. The purpose of these funding methods is to smooth out pension costs over the work-lives of employees. Contributions in excess of benefit accruals might be made on behalf of workers in the early years of employment, thereby allowing annual contributions in later years to be less than the annual increase in accrued benefits.

Legal Requirements for Pension Contributions by Employers

Federal laws impose minimum standards on annual contributions to most private pension plans. 18/ Given that a sponsor uses an allowable actuarial funding method to allocate pension costs, rules of both ERISA and the IRS require the employer to make contributions in each year for two types of pension costs--the "normal" cost of the pension in that year, plus a fraction

^{18.} The federal government also sets upper limits on annual pension contributions, so as to limit the reduction in taxable income that the employer can achieve through this expense. See McGill, Fundamentals of Private Pensions, p. 371.